

DOE and Private-Sector Partners Announce New Money-Saving Specification for Commercial Air Conditioners

Jointly developed design specification to reduce costs to businesses, improve economic competitiveness

Energy Secretary Steven Chu has announced that the U.S. Department of Energy (DOE) is joining with industry partners to release a new design specification for 10-ton capacity commercial air conditioners, also known as rooftop units (RTUs). The new specification resulted from DOE's efforts, working in coordination with the private sector, to develop energy-saving products that will save money for businesses. When built according to the criteria of the new specifications, the high-efficiency rooftop units are expected to reduce energy use by as much as 50 to 60 percent over equipment being replaced. Commercial buildings account for 18 percent of energy used nationwide and include significant opportunities for energy and financial savings that can help American companies be more competitive on a global scale.

To help achieve the best-in-class rooftop units specified by industry partners and to drive deployment, DOE national laboratories, including Lawrence Berkeley National Laboratory, the National Renewable Energy Laboratory, Pacific Northwest National Laboratory, and Oak Ridge National Laboratory, will provide technical assistance to manufacturers in designing, constructing, measuring, and testing new air conditioner units produced to this specification.



The DOE RTU design specification strongly signals suppliers on commercial buyer support for rooftop air conditioning units manufactured in compliance with innovative, energy-efficient specifications.

Private-sector members of DOE's Commercial Building Energy Alliances (CBEAs) are already announcing their interest in purchasing the new highly efficiency RTUs.

The CBEAs, composed of leading building owners and operators throughout the United States, are receiving technical support from DOE and its national laboratories on a broad range of existing projects intended to catalyze market adoption of advanced energy-savings tools, technologies, and best practices to make buildings more energy efficient, productive, and affordable.

The CBEAs are leveraging the purchasing power of their membership—representing broad swaths of the retail, commercial real estate, and healthcare sectors—to demonstrate market demand for these high-performance, competitively priced, packaged RTUs. Target Corp. and Walmart Stores, Inc. are among the growing list of CBEA members indicating their support.

Nationwide, if all the 10-ton commercial units sold in a given year were built to this specification, businesses could save about \$50 million each year in energy costs. These units are a prime candidate for specifications because packaged unitary air conditioners—including RTUs—account for more than 50 percent of the energy used for cooling conditioned commercial floor space.

Benefits for All Stakeholders

The new specification was developed by industry partners and facilitated by DOE technical assistance. The rooftop units resulting from this specification will have an Integrated Energy Efficiency Rating (IEER) of 18 and use 50 to 60 percent less energy

compared to the current ASHRAE 90.1-2010 standard, depending on location and facility type.

In addition, the units will include advanced controls that support automated communication and diagnostics, enabling wireless communication to the owner's automation system, and ensuring that the unit operates at top energy and operational performance levels throughout service life. The development of buyer-driven, high-performance RTUs will result in big wins for both building owners and manufacturers:

- Building owners will save energy and money
- Manufacturers will develop better equipment and be encouraged by the strong market signal for their energy-efficient products.

Further, by helping DOE advance the reduction of energy use in commercial buildings, participating companies will support the nation's progress toward energy independence and enhance their own reputations as responsible environmental stewards.

An Incentive for Manufacturers

To encourage development of products that comply with the specification, participating CBEA members agree to strongly consider purchasing units that:

- Comply with the specification
- Are consistent with CBEA cost-effectiveness criteria
- Align with CBEA procurement time frames.

The CBEAs will work with manufacturers and DOE to observe the factory testing of prototype units that

comply with the specification. DOE's technical assistance through its laboratories includes the following areas:

- Component design support
- Testing
- Fault detection and diagnostics system design and testing
- Auto-commissioning feature design and testing
- Controls and communications design and testing
- Energy simulations assistance.

What is in the Specification?

The specification covers hardware, performance, and controls, including information detailing basic RTU elements and various equipment options. See the list below for the specification's primary features.

Primary Features of the Specification

- Higher-efficiency requirement (18 IEER)
- Direct digital-control-based unit control system
- Automated performance monitoring
- Automated diagnostics and fault detection
- Wireless communication

A Many-Faceted Program

This CBEA initiative goes far beyond the development of this specification. Participating members may become involved in some or all of the following activities:

- Engaging buyers
- Working with manufacturers
- Validating performance
- Facilitating purchases
- Measuring results.

How to Participate

For the CBEAs to encourage manufacturers to develop high-performance RTUs, widespread building owner support for the specification is key. Many CBEA members have already indicated their support through the "signatures" of their corporate logos on the DOE announcement, which designates members interested in purchasing products that comply with the specification. The CBEAs encourage all members to take advantage of this unique opportunity and support this far-reaching initiative.



A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.